

CURRENT CLAIMS

1. (Previously Amended) An apparatus for rapidly, deterministically transferring data, the apparatus comprising:
 - a processor configured to process data;
 - a volatile memory configured to store the data;
 - a boot control module configured to boot the processor with a standard operating kernel under a normal operating condition and to reboot the processor with a data transfer kernel under an abnormal operating condition that threatens a loss of data in the volatile memory, wherein the reboot occurs without a loss of data within the volatile memory; and
 - the data transfer kernel configured to support a data save operation configured to save data in the volatile memory to a storage device.
2. (Canceled)
3. (Previously Amended) The apparatus of claim 1, wherein the data save operation is selected from the group consisting of a storage configuration operation, a transfer process loading operation, a data transfer operation, and a system shutdown operation.
4. (Original) The apparatus of claim 3, wherein the data transfer kernel is configured to exclusively support the data save operation.
5. (Previously Amended) The apparatus of claim 1, further comprising a memory module comprising data bits for marking data to be saved during the data save operation.

6. (Original) The apparatus of claim 5, wherein the standard operating kernel is further configured to mark data to be saved during a data save operation.
7. (Original) The apparatus of claim 1, wherein the data transfer kernel is configured to configure the storage device for specialized data save operations.
8. (Original) The apparatus of claim 1, wherein the data transfer kernel is configured to conduct a power down procedure.
9. (Canceled)
10. (Previously Amended) An apparatus for rapidly, deterministically transferring data to a storage device, the apparatus comprising:
 - a storage device configured to store data;
 - a data transfer kernel configured to support data saving operations;
 - a computer in communication with the storage device, the computer configured to load the data transfer kernel during a reboot procedure in response to an abnormal operating condition that threatens the loss of data in a volatile memory, wherein the reboot procedure occurs without a loss of data in the volatile memory; and
 - the data transfer kernel configured to support a data save operation configured to save data in the volatile memory to the storage device.
11. (Original) The apparatus of claim 10, wherein the data transfer kernel is configured to exclusively support devices and processes required to save data to the storage device.

12. (Original) The apparatus of claim 10, wherein the data transfer kernel is configured to power down the computer and the storage device.

13. (Previously Amended) An apparatus for rapidly, deterministically saving data, the apparatus comprising:

means for saving data in a non-volatile memory;

means for detecting a data save condition comprising an abnormal operating condition that threatens the loss of data in a volatile memory; and

means for booting a processor with a data transfer kernel without a loss of data in the volatile memory in response to the abnormal operating condition, the data transfer kernel configured to save data to the means for saving data.

14. (Original) The apparatus of claim 13, further comprising means for configuring the means for saving data for data save operations.

15. (Original) The apparatus of claim 13, further comprising means for booting a standard operating kernel for normal operation.

16. (Original) The apparatus of claim 13, further comprising means for marking data to be saved during a data save operation.

17. (Previously Amended) A system for rapidly, deterministically saving data to a storage device, the system comprising:

a processor configured to process data;

a memory configured to provide volatile storage for the data;

a storage device configured to provide non-volatile storage for the data;

a boot control module configured to boot the processor module with a standard operating kernel under a normal operating condition and to reboot the processor with a data transfer kernel under an abnormal operating condition that threatens the loss of data in the memory, wherein the reboot occurs without a loss of data in the memory; and

the data transfer kernel configured to support a data save operation configured to save data in the memory to the storage device.

18. (Previously Amended) The system of claim 17, wherein the standard operating kernel is configured to mark data in the memory to be saved by the data transfer kernel during a data save operation.

19. (Previously Amended) The system of claim 17, wherein the data transfer kernel exclusively supports devices, operations, and processes required to save data.

20. (Original) The system of claim 17, wherein the data transfer kernel configures the processor for data saving operations.

21. (Original) The system of claim 17, wherein the data transfer kernel configures the storage device for specialized data saving operations,

22. (Original) The system of claim 17, wherein the data transfer kernel is configured to conduct a power down procedure.

23. (Canceled)

24. (Previously Amended) A method for rapidly, deterministically saving data, the method comprising:

detecting a data save condition that threatens the loss of data in a volatile memory; and
rebooting a processor module with a data transfer kernel configured to support a data save operation configured to save the data in the volatile memory to a non-volatile storage device, wherein rebooting the processor module occurs without a loss of data in the volatile memory.

25. (Previously Amended) The method of claim 24, further comprising exclusively supporting devices, operations, and conducting processes required to save data to a storage device.

26. (Previously Amended) The method of claim 24, further comprising configuring the non-volatile storage device to receive data.

27. (Original) The method of claim 24, further comprising marking data to be saved by the data transfer kernel.

28. (Previously Amended) A computer readable storage medium comprising computer readable program code for rapidly, deterministically saving data, the program code configured to:

boot a processor module with a data transfer kernel configured to support a data save operation and in response to an abnormal operating condition that threatens the loss of data in a volatile memory module comprising volatile memory; and

transfer the data with the data save operation from the memory module to a non-volatile storage device without a loss of data in the memory module.

29. (Original) The computer readable storage medium of claim 28, wherein the computer readable code is further configured to mark data in the memory module to be saved to the storage device.

30. (Previously Amended) The computer readable storage medium of claim 28, wherein the computer readable code is further configured to exclusively support devices, operations, and processes required to save data to the storage device.